REMARKS

Claims 1-20 continue to be the pending claims in the application. Claims 2-6, 8-12, 14 and 15 were withdrawn in response to the Office Communication dated August 22, 2005. Reconsideration of the application in light of the remarks which follow is respectfully requested. The Applicants also respectfully request that the Examiner reconsider the withdrawing of claim 8 from consideration. Claim 8 depends on claim 1.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 7, 13 and 16-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horner Jr. et al. (U.S. Patent No. 6,365,533) in view of Lynn et al. (U.S. Patent No. 6,093,481) and Morgan et al. (U.S. Patent No. 3,062,682). The Examiner contends that Horner Jr. et al. disclose a foamed facer for an insulation board. The Examiner further contends that the facer of Horner Jr. et al. comprises a fiber mat containing a binder for the fibers, and coated with a prefoamed composition which contains a thixotropic polymer latex, a foam sustaining surfactant, and a filler. The Examiner concedes that Horner Jr. et al. do not teach a metallic layer that is adhered to the foamed facer, or that the foamed facer comprises prefabricated microcells, but alleges that Lynn et al. provide the teaching of the metallic layer and that Morgan et al. provide the teaching of the prefabricated microcells.

The Claimed Invention

Claim 1 relates to a composite material comprising a first layer which comprises a prefabricated microcells component, a surfactant component, surfactant-generated microcells, a filler component and a binder component and a second layer comprising a metallic component adhered to the first layer. Claims 7, 13 and 16-20 are dependent from Claim 1.

The Prior Art

Horner Jr. et al. disclose a facer member for use in the construction industry comprising a preformed fiber mat substrate coated on one side with a prefoamed, self-sustaining foam mixture. The facer member disclosed by Horner Jr. et al. can be used to manufacture insulation boards comprising a pair of facer members laminated to the surfaces of the foam core of a traditional insulation board. *See* Horner Jr. et al., col. 5, lines 34-39. Further, Horner Jr. et al. teach that the facer member may be fed directly to an insulation board manufacture apparatus, e.g. a constricted rise laminator, "wherein the uncoated fiber surface of the mat contacts at least one exposed surface of a foamed or foamable thermosetting non-elastomeric core in the manufacture of an insulation board as described hereinafter." Horner Jr. et al., col. 4, lines 19-26 (emphasis added). Furthermore, Horner Jr. et al. indicate that where the foamed coating on the facer is dried and/or cured, "the bonding strength between the uncoated fibers and the core material in the resulting product is enhanced due to reduced penetration of the coating mixture into the mat by reason of its prefoamed state." Horner Jr. et al., col. 5, lines 4-8. Horner Jr. et al. further state that if the foam of the facer is completely cured before entering the laminator, "the core material is either poured onto the uncoated fibrous surface of the facer or laminated thereto with adhesive or bonding agent." Horner Jr. et al., col. 5, lines 8-12 (emphasis added). Thus, it is clear from the disclosure of Horner Jr. et al. that the uncoated fiber surface of the facer member should be in direct contact with the core material to produce an insulation board with enhanced bonding strength between the facer member and the core material. *See* Declaration of Mr. Matti Kiik at point 11. This is in line with the objective of Horner Jr. et al. to overcome the problems of delamination.

Horner Jr. et al. also state that the facer members "eliminate the need for heat retaining members at the top and bottom of the stack and significantly reduce the prior problem of the board's susceptibility to cold temperature delamination." Horner Jr. et al., col. 4, line 67

to col. 5, lines 1-4 (emphasis added). Horner Jr. et al. teach that the facer member insulation boards have tolerance to weathering and that they are superior and have broader application than other insulation boards, such as being useful as non-foil, non-glare sheathings. *See* Horner Jr. et al., col. 7, lines 9-12. This is consistent with Horner Jr. et al.'s description of the prior art in which foil was used which Horner Jr. et al. describe as "leading to disruption of cell structure, delamination and warping" and as costly and thus not desirable. *See* Horner Jr. et al., col 2, lines 20-24. Horner Jr. et al. do teach that other facers may be used in addition to the facer of the asserted invention. However, when they are used, the claimed inventive facer member is placed on one side of the foam core of a traditional insulation board, and the other facer (which may be aluminum foil) is placed on the other side of the foam core. *See* Horner Jr. et al., col. 5, line 62 to col. 6, lines 3-13.

Lynn et al. disclose a facing sheet for use in fabricating building materials. The facing sheet comprises a polymeric layer or composite thereof. Lynn et al. also teach that the facing sheet is adhered to at least one major surface of a rigid foam insulation board. *See* Lynn et al., col. 2, lines 16-18. Lynn et al. facing composites comprise combinations of the outer polymeric layer with one or more of conventional facing materials including fibrous material, metals, such as sheets of aluminum or steel, and sheets or films of plastics. *See* Lynn et al., col. 2, lines 32-37. Lynn et al. further disclose that the metallic layer may be employed in the facing composites as illustrated in FIGS. 2, 3 and 4 where the metal may be layers 17, 18, 23, 24; 28 and 32, respectively.

Morgan et al. disclose a method of producing a composite foam and mineral product by injection or insertion of a liquid foamable material into a fibrous mass. The product is composed of mineral fibers associated with a foamed material. *See* Morgan et al., col. 2, lines 7-10. Morgan et al. further disclose that filler material may be added to the product. Such filler material includes, *inter alia*, resinous microballoons. *See* Morgan et al., col. 13, lines 62-67.

There is No *Prima Facie* Case of Obviousness

The combination of Horner Jr. et al., Lynn et al. and Morgan et al. does not support a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the combined references must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and must not be based on the Applicants' disclosure. *In re Vaeck*, 947 F2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991); MPEP § 2142.

In this case, there is no suggestion or motivation in any of the cited references to alter Horner Jr. et al. to produce a composite material according to the present claims. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

"It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986).

"A showing of obviousness requires a motivation or suggestion to combine or modify prior art references, coupled with a reasonable expectation of success." *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1354 (Fed. Cir. 2003). *See* also *In re Dow Chem Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988)("Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure.").

Because virtually all inventions are combinations of old elements, "the suggestion to combine requirement stands as a critical safeguard against hindsight analysis". *Yamanouchi Pharm. Co. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339, 1343 (Fed. Cir. 2000). *See* also *Grain Processing Corp. V. Am. Maize-Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988)("the question is whether there is something in the prior art as a whole to suggest the desirability, and thus, the obviousness of making the combination"); *Gillette v. S.C. Johnson & Son, Inc.*, 919 F.3d 720, 724 (Fed. Cir. 1990)("Focusing on the obviousness of substitutions and differences, instead of on the invention as a whole, is a legally improper way to simplify the often difficult determination of obviousness").

Applicants' claimed invention is not suggested by the cited prior art. The presently claimed composite material comprises at least a first and a second layer, wherein the second layer is a metallic component and wherein the second layer is adhered to the first layer. The first layer of the present invention comprises a prefabricated microcells component, a surfactant component, surfactant-generated microcells, a filler component and a binder component. The Examiner has compared the facing member of Horner et al. to the first layer of the present invention, acknowledging the absence of pre-fabricated microcells and a metallic component, but concluding that the combination fo Horner et al., Lynn et al. and Morgan et al. renders obvious the present invention.

The Applicants respectfully disagree that a skilled artisan would be motivated by Horner et al., Lynn et al. or Morgan et al., alone or in combination, to make the present invention. Horner et al. teach facer members that eliminate the need for heat retaining members at the top and bottom, thereby reducing a traditional insulation board's susceptibility to cold temperature delamination. *See* Horner et al., col. 5, lines 1-4 and Matti Kiik Declaration, attached hereto, at point 11. Horner et al. also teach that the uncoated fiber surface [of the facer member] contacts an exposed surface of the core. *See* Horner et al., col. 4, lines 23-26. Thus, it

is not surprising that, while Horner et al. contemplate the use of aluminum foil facers, they teach that when two facer members are used, the aluminum foil is placed on one side of the foam core of a traditional insulation board and the asserted inventive facer member is placed on the other side of the insulation board. *See* col. 5, line 62 through col. 6, lines 3-13 and Matti Kiik Declaration at point 12.

Lynn et al. note that a disadvantage associated with the use of aluminum foil "stems from its fragility, which can result, e.g. in foil breakage during foam board manufacture." Lynn et al., col. 1, lines 33-35. They assert that their "polymeric layer" facing sheet is "characterized by exceptional toughness and resistance to puncturing" such that, although it "is sufficiently flexible so that it can be readily wound on [a] roll...it still possesses marked toughness making it especially resistant to damage during foam lamination production and subsequent utilization in end use applications in the construction market." Lynn et al., col. 2, lines 22-23 and 53-57. Thus, Lynn et al. teach that their facing sheet may be used in combination with a foil sheet.

Horner Jr. et al. actually teach away from the combination with Lynn et al. and from the present invention. Horner Jr. et al. teach that the uncoated fibers of the facer member be in direct contact with the core material to produce an insulation board with enhanced bonding strength between the facer member and the core material. *See* Horner Jr. et al., col. 5, lines 4-12 and col. 4, lines 23-26 and Declaration of Mr. Matti Kiik at point 10. Horner Jr. et al. teach that the asserted inventive facer members eliminate the need for heat retaining members at the top and bottom of insulation boards (i.e. aluminum foil at the top and/or bottom) and that aluminum facers are not desired because they cause disruption, delamination and warping and because they are costly. *See* Horner Jr. et al., col. 2, lines 20-24 and Matti Kiik Declaration at point 11. As noted above, Horner et al. also teach that if a foil is used it should be placed on one side of the foam core of an insulation board and the facer member on the other side. A prior art reference

must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. MPEP § 2141.02 (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984))(emphasis in original). Thus, Horner et al., teach away from including foil on the surface of the facer member. In addition, the use of aluminum facers as taught by Horner Jr. et al. is also undesirable because such facers hold and reflect heat and often cause warping and deterioration of wood overlayment. *See* Horner Jr. et al., col. 5, lines 50-55.

Thus, the skilled artisan, looking to Horner et al. and Lynn et al., would not be motivated to adhere an aluminum foil to the asserted inventive facer member of Horner et al, either on the exposed side of the facer member[1] or in between the facer member and the foam core. *See* Declaration of Mr. Matti Kiik at points 10 and 11. At best, the combination of Horner et al. and Lynn et al. would suggest to a skilled artisan to make an insulation board comprising a traditional foam core having the facer member of Horner Jr. et al. adhered to one side of the foam core and perhaps the facer of Lynn et al. adhered to the other side of the foam core or simply aluminum foil adhered to the other side of the core. *See* Matti Kiik Declaration at point 15.

Morgan et al. do not provide the teaching necessary to make up for the deficiencies of Horner Jr. et al. and Lynn et al. The three cited patents do not suggest the combination of disparate elements that would be required to arrive at Applicants' claimed invention. Moreover, nothing in those references indicates that there would be a reasonable expectation that such a combination would be successful. Indeed, Horner Jr. et al. indicate that it would not be.

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[1]/Applicants note that in the Advisory Action dated January 10, 2007, the Examiner acknowledged that Horner Jr. et al. teaches away from including aluminum foils as outer layers at the top and bottom of the laminate stack. *See* Advisory Action, page 3, lines 8-12.

Accordingly, Applicants respectfully request withdrawal of the rejection of the claims under 35 U.S.C. §103(a) as obvious over Horner Jr. et al. in view of Lynn et al. and Morgan et al.

Conclusion

In view of the foregoing remarks, Applicants submit that the present invention is now in condition for allowance. Accordingly, favorable reconsideration of the application is earnestly solicited. Please send any further correspondence relating to this application to the undersigned attorneys at the address below.

Applicants' undersigned attorneys may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

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